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UNITED STATES DEPARTMENT OF AGRICULTURE BUREAU OF PUBLIC ROADS DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCRORY, CHIEF

MONTHLY NEWS LETTER

WASHINGTON, JUNE 20, 1931

Several years ago the regulations were interpreted to:

PERMIT THE MAKING OF PURCHASES NOT EXCEEDING \$50 IN ANY ONE:

DAY. This interpretation is no longer permitted by the Comp-:

TROLLER GENERAL, WHO REQUIRES COMPETITION IF PRACTICABLE,:

WHENEVER SUPPLIES OF A SIMILAR NATURE EXCEED THE AMOUNT OF:

\$50 OVER A SHORT PERIOD OF TIME, WHEN IT IS POSSIBLE TO:

ANTICIPATE THE NEED FOR THE SUPPLIES. IT WILL BE OBSERVED:

THAT THE FISCAL REGULATIONS (PAR. 66, 67, AND 68) DO NOT:

AUTHORIZE PURCHASES OF SUPPLIES IN AN AMOUNT NOT EXCEEDING:

\$50 A DAY, BUT STATE THAT BLDS MUST BE SECURED "WHEN THE:

AGGREGATE AMOUNT INVOLVED EXCEEDS \$50." IF IT IS NOT PRACT:

TICABLE TO SECURE BIDS AN EXPLANATORY STATEMENT MUST ACCOMPANY:

THE VOUCHER.

MR. McCrory Left June 18 to attend the meeting of the Advisory Council of Research in Mechanical Farm Equipment, at Chicago. Following this meeting he will attend the annual convention of the A.S.A.E. at Ames, lowa, where he will deliver two papers, one on the subject of "The Bureau of Agricultural Engineering and Farm Structures Research," and the other "Work of the Bureau of Agricultural Engineering that is of Interest to the Reclamation Section."

Messrs. L.A. Jones, R. B. Gray, Wallace Ashby, George R. Boyd, and C. K. Shedd also expect to attend the A.S.A.E. convention.

M. C. Betts reports that drawings and specifications have been com-Pleted and bids asked for an eagle flight cage at the Washington Zoo. Bids will soon be asked for a small animal barn for the Beltsville farm.

Chas. A. Bennett is spending several weeks in the Washington Office conferring with Department officials and preparing reports on investigations of cotton ginning equipment and methods. He expects to return to his headquarters at Stoneville, Miss. Early in July.

FOLLOWING THE CONVENTION AT AMES, S. P. LYLE WILL VISIT EXTENSION ENGINEERS IN KANSAS AND OKLAHOMA.

Agrical Evident Period THE PASS SAME WAS LOSSED ASSESSED. AT THE TARGET A PARTY OF SAFETY AND THE AREA SHOWN ARROWS t ent are no DEF improbate mor someour or our de las forman Industrial and ere quitternise exemple un al will exem later and and The state of the s TRUCTO (Design of the To Politication) - Souther for a site of the political of the contact of t to the designation of the state Meses Lie Journal In a many inches have a little a Borse of ALTES MILE DE SENTE L'ESTATE PROPERTO MAIN SORDE PARTICULA HAVE BELL STATE SALE. SALE MAIN SENT SALE SALE MAIN DE SENT SENT SALE SALE MAIN SENT SENT SALE SALE MAIN SON SENT SALE SALE PARTICULA PAR at the policy in the second of or engineers as great the appearing particularly and appearing to account of the contract of t CHENCES THE COURSE SELECTION OF SELECTION OF THE SELECTIO

A. LINCOLN FELLOWS LEFT BERKELEY MAY 28 FOR DENVER, BOISE, CORVALLIS, AND OTHER POINTS IN THE NORTHWEST. MR. FELLOWS IS SUPERVISING THE FILMING OF A MOTION RICTURE SCENARIO ON IRRIGATION ORIGINALLY PREPARED IN THE BERKELEY OFFICE. THE SCENARIO, WHEN COMPLETED WILL BE AVAILABLE FOR EDUCATIONAL AND INSTRUCTIONAL PURPOSES. IT IS THE FIRST ATTEMPT THAT HAS BEEN MADE BY THIS DIVISION TO OBTAIN MOTION PICTURES OF IRRIGATION OPERATIONS.

AMONG THE RADIO TALKS GIVEN RECENTLY BY THOSE WORKING OUT OF THE BERKELEY OFFICE WERE A SERIES OF TALKS BY M. R. LEWIS IN REFERENCE TO PUMPING EQUIPMENT, WHEN TO IRRIGATE, AND AMOUNT OF IRRIGATION WATER REQUIRED; AND BY A. T. MITCHELSON ON WATER—SPREADING AND STORAGE OF WATER UNDERGROUND. THESE WERE GIVEN OVER THE NATIONAL BROADCAST SYSTEM, FROM PORTLAND AND SAN FRANCISCO, RESPECTIVELY.

- H. F. BLANEY REPORTS AS FOLLOWS CONCERNING THE INVESTIGATION BEING CARRIED ON AT DEVIL CANYON IN SOUTHERN CALIFORNIA, IN COOPERATION WITH THE U. S. CALIFORNIA FORESTRY EXPERIMENT STATION, THE PRIMARY PURPOSE OF WHICH IS TO DETERMINE THE CONSUMPTIVE USE OF WATER BY CANYON BOTTOM VEGETATION, AND TO DEVELOP METHODS OF INCREASING THE YIELD OF WATER FOR IRRIGATION PURPOSES BY PROPER CONTROL OF THE MOUNTAIN WATERSHED. THE FIRST SEASON, EVAPORATION LOSSES WILL BE DETERMINED FOR SEVERAL THOUSAND FEET OF CANYON BOTTOM BY MEASURING THE INFLOW AND THE OUTFLOW AT BEDROCK CONTROLS EQUIPPED WITH AUTOMATIC RECORDERS. THE UPPER CONTROLS HAVE BEEN ESTABLISHED AT THE "FALLS" IN THE TWO BRANCHES OF THE CANYON. THE LOWER CONTROL IS BEING ESTABLISHED BY BUILDING A CONCRETE DAM ON BEDROCK, WHICH IS SOME 20 FEET BELOW THE SURFACE. DURING THE MONTH OF MAY, THE MATERIAL IN THE STREAM-BED WAS EXCAVATED TO BEDROCK AND CONSTRUCTION OF THE DAM WILL START EARLY IN JUNE. TWO 3-INCH V-NOTCH FLUMES HAVE BEEN INSTALLED FOR MEASUREMENT OF LOW WATER FLOW OVER THE FALLS.
- R. L. Parshall and Carl Rohwer installed one of their new double—head indicating and recording instruments on the new 20-foot reinforced concrete flume on the Bijou Canal some 20 miles east of Greeley, Colo. At the time of their visit they had a chance to check up the loss-in-head diagram which has been prepared for a bulletin on Large Flumes. Two individual observations at different submergence and discharge show this diagram to agree exactly with the observed conditions. The State Hydrographer has recently made a very excellent check measurement on the discharge through this flume, where the computed rate of flow was based on the submergence correction diagram developed from data on the Holbrook Flume in the Arkansas Valley.
- L. T. Jessup spent the month of May on matters pertaining to the adjudication of the Donner and Blitzen River, Oregon, which work is being done for the Bureau of Biological Survey. This included supervising the collection of data and the preparation of a map and other evidence in connection with the contest of the United States against the priority claims of the Eastern Oregon Live Stock Co. A very considerable part of the time was used in helping the assistant to the Solicitor in his preparation of the Government's case and helping with cross examination of witnesses. Mr. Jessup returned to Yakima May 24 and is now making preparations for the adjudication hearing which will meet again at Salem on June 10 and at Burns on July 9.

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Under the direction of O. A. Faris, his assistant F. J. Fricke has spent considerable time on mechanical analyses, moisture determinations and bearing tests on samples of material from the Eagle Mountain dam, being constructed on the west fork of Trinity River, Texas, by the hydraulic method. These tests were made at the request of the Texas Board of Water Engineers.

LLOYD N. Brown, who for several years has been engaged in cooperative work on use of water in the Sacramento-San Joaquin Delta region of California, was appointed agent on the Government rolls, effective May I, and is now stationed at Dos Palos, Calif., on the western side of the San Joaquin Valley. He is conducting investigations in cooperation with the University of California Experiment Station on Irrigation of Cotton and Rice. During the present season observations are being made on cotton irrigation as practiced by local farmers. These studies will include primarily soil moisture determinations and plant response. Eighteen Rice tanks have been installed on which records will be kept of the moisture losses as occasioned by transpiration, water surface evaporation, and loss by downward percolation through the soil.

COLIN A. TAYLOR LEFT ONTARIO, CALIF., MAY 11 FOR A TWO-WEEKS TRIP TO SCOTTSBLUFF, NEBR. AND HUNTLEY, MONT. WHERE HE INSPECTED PROPOSED SITES FOR EXPERIMENTAL PLOTS IN CONNECTION WITH COOPERATIVE WORK WITH THE BUREAU OF PLANT INDUSTRY.

THE FOLLOWING ITEMS RELATING TO THE SOIL EROSION EXPERIMENT FARMS WERE SUBMITTED BY C. E. RAMSER:

THE COUNTY AGENT OF LOGAN COUNTY, OKLA. TOGETHER WITH INTERESTED FARMERS, AND REPRESENTATIVES OF THE A. AND M. COLLEGE AND THE GUTHRIE SOIL EROSION EXPERIMENTAL FARM MADE A TOUR OF THE COUNTY, ON MAY 29, TO STUDY SOIL EROSION AND AGRONOMIC CONDITIONS. MR. RIESBOL REPORTS THAT MUCH INFORMATION OF VALUE WAS OBTAINED BY VISITING A NUMBER OF TERRACED FIELDS WHERE CONDITIONS OF SOIL AND TOPOGRAPHY ARE CONSIDERABLY DIFFERENT FROM THOSE ON THE GUTHRIE FARM.

- H. O. HILL REPORTED AT TEMPLE, TEXAS ON MAY 18 TO TAKE CHARGE OF THE ENGINEERING EXPERIMENTS ON THE TEXAS BLACKLAND SOIL EROSION EXPERIMENT FARM. MR. HILL REPORTS THAT CROPS ARE IN GOOD CONDITION AT TEMPLE AND THAT ALL OATS ARE HARVESTED. A PARTY OF STUDENTS FROM THE A. AND M. COLLEGE AT COLLEGE STATION VISITED THE EXPERIMENT FARM ON MAY 13.
- R. R. Drake has practically completed the mounting of a small Gleaner combine harvester-thresher on a McCormick-Deering 10-20 tractor. This combine will be used on the small soil erosion experimental plots and terraces.
- R. W. Baird reports a deficiency of rainfall on the East Texas Soil Erosion Experiment Farm and that crops on the terrace ridges are suffering from lack of moisture. Moisture samples taken show that the moisture content of the soil in the terrace ridges is less than on unterraced areas or on the land between the terraces. Professor Dan Scoates, Head of the Department of Agricultural Engineering of the A. and M. College of Texas inspected the various experiments.
- R. A. NORTON HAS VERY NEARLY COMPLETED THE TOPOGRAPHIC SURVEY OF THE CLARINDA SOIL EROSION EXPERIMENT FARM lowa. ALSO A LARGE PART OF THE MAP HAS BEEN PLOTTED WHICH IS BEING USED AS A BASE MAP FOR THE SOIL SURVEY OF THE FARM.

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A TERRACE ENCIRCLING THE TOP OF A HIGH KNOLL ON THE PULLMAN SOIL EROSION EXPERIMENT FARM IS BUILT ON SLOPES AS HIGH AS 40 TO 45 PER CENT. P. C. McGREW REPORTS THAT RADICAL CHANGES WOULD HAVE TO BE MADE IN PRESENT MACHINERY SO AS TO BE FLEXIBLE ENOUGH IN OPERATION TO CROSS TERRACES ON SUCH STEEP SLOPES. C. K. SHEDD REPORTS AN ALL-DAY FIELD MEETING ON THE BETHANY SOIL EROSION EXPERIMENT FARM, MISSOURI. AN INSPECTION TOUR OF THE FARM WAS MADE BY VISITORS AND TALKS WERE MADE ON THE SUBJECT OF SOIL EROSION BY J. L. BOATMAN AND Q. C. AYRES OF THE IOWA STATE COLLEGE, M. F. MILLER, J. C. Wooley and K. G. HARMON OF THE UNIVERSITY OF MISSOURI, L. A. SAUNDERS AND A. J. SECOR, COUNTY AGENTS OF GENTRY COUNTY, MISSOUR! AND VAN BUREN County, lowa, respectively. The attendance was 500, many of whom came FROM A DISTANCE OF 100 MILES OR MORE. R. B. GRAY RETURNED MAY 20 FROM A TWO-WEEKS! TRIP IN THE MIDDLE WEST WHERE HE, IN COMPANY WITH TWO OTHER MEMBERS OF THE A.S.A.E., FUELS AND LUBRICANTS COMMITTEE, VISITED SOME 15 ENGINE AND TRACTOR MANUFACTURERS, AND CONFERRED WITH THEIR ENGINEERS RELATIVE TO PROBLEMS INVOLVING THE USE OF FUELS AND LUBRICANTS AND TRENDS IN TRACTOR ENGINE DESIGN. HE ALSO VISITED THE GLEANER COMBINE CO. AT KANSAS CITY. ON JUNE 4 HE RETURNED FROM A THREE-DAYS VISIT AT THE WASHINGTON OFFICE. 0. K. HEDDEN RETURNED MAY 15 FROM RICE BRANCH EXPERIMENT STATION, ARK., WHERE HE HAD BEEN CONDUCTING EXPERIMENTS IN BURNING FOR CONTROLLING RICE STEM ROT, IN COOPERATION WITH THE ARKANSAS EXPERIMENT STATION. S. W. McBirney Left May 19 for Walla Walla, Wash., to conduct ex-PERIMENTS WITH THE ROTO-TILLER FOR CONTROLLING THE WIRE WORM, IN COOPER-ATION WITH THE BUREAU OF ENTOMOLOGY. HE PLANS TO ATTEND THE A.S.A.E. MEETING AT AMES ON HIS RETURN TRIP. PREPARATIONS ARE NOW UNDER WAY AT TOLEDO FOR MOVING INTO A PART OF

PREPARATIONS ARE NOW UNDER WAY AT TOLEDO FOR MOVING INTO A PART OF THE QUARTERS JUST BEING VACATED BY THE PLANT QUARANTINE CONTROL ADMINISTRATION.

R. M. Merrill and force at South Norwalk, Conn., are planning on staging a corn borer machinery exhibit at the Rhode Island State College June 17.

THE FOLLOWING ARE RECENT ADDITIONS TO OUR AGRICULTURAL ENGINEERING LIBRARY:

Davidson, J. B. AGRICULTURAL MACHINERY. New York, John Wiley & Sons, Inc. 1931. 396 p. "Represents an effort to organize and present in readable form the most authentic and useful information on the subject available at the present time.

Does not include instructions in the repair of machines, for it is intended that instruction in shop work and practical farm mechanics will supplement that in agricultural machinery."

New Mexico, Middle Rio Grande Conservancy District.

Report of the Chief engineer, submitting a plan for flood control, drainage and irrigation of the Middle Rio Grande Conservancy project. Official plan approved Aug. 15, 1928.3 v.

V. 1. THE PLAN. ESTIMATES OF QUANTITIES AND COSTS. WATER SUPPLY.

V. 2. CONTRACT FORMS AND SPECIFICATIONS.

v.3 Property affected by the plan. (NOT published IN FORM AVAILABLE FOR DISTRIBUTION.)

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HELDT, P. M.

MOTOR VEHICLES AND TRACTORS: A TEXTBOOK FOR STUDENTS AND A HANDBOOK FOR ENGINEERS. NYACK, N.Y. 1929. 678 P.

JACOBY, H.S. AND DAVIS, R. P.

Timber design and construction. 2 edition. N.Y., John Wiley and Sons, Inc., 1930. 334 p. Originally published under title "Structural details."

JONES, FRANKLIN D. EDITOR.

INGENIOUS MECHANISMS FOR DESIGNERS AND INVENTORS. N.Y. ILLUSTRATED DESCRIPTIONS OF MANY OF THE MOST INGENIOUS MECHANICAL MOVEMENTS DEVISED, WHICH HAVE STOOD THE TEST OF ACTUAL PRACTICE.

McCORMICK, CYRUS

CENTURY OF THE REAPER: AN ACCOUNT OF CYRUS HALL MCCORMICK,
THE INVENTOR OF THE REAPER: OF THE MCCORMICK HARVESTING
MACHINE COMPANY, THE BUSINESS HE CREATED: AND OF THE
INTERNATIONAL HARVESTER COMPANY, HIS HEIR AND CHIEF
MEMORIAL. BOSTON, HOUGHTON MIFFLIN COMPANY, 1931. 307 P.

A PARTIAL AND SOMEWHAT PREJUDICED ACCOUNT OF CERTAIN PHASES

IN THE DEVELOPMENT OF THE AGRICULTURAL IMPLEMENT INDUSTRY.

U. S. BUREAU OF AGRICULTURAL ECONOMICS.

AGRICULTURAL ECONOMICS BIBLIOGRAPHY No. 31. CALIFORNIA: Pt. IV.- LAND, FARM PROPERTY, IRRIGATION, AND MISCELLANEOUS ITEMS. APRIL, 1931. 127 p. MIMEOGRAPHED.

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